

IN THE CLAIMS:

1. (Original) A method, comprising:
forming an isolation trench and a contact trench in a substrate, wherein a width of said isolation trench is less than a width of said contact trench;
depositing an insulating material over said isolation trench and said contact trench to substantially fill said isolation trench and reduce an effective width of said contact trench;
removing at least partially said insulating material from a bottom of said contact trench;
and
filling in a conductive material into said contact trench to form a contact.
2. (Original) The method of claim 1, further comprising forming a buried conductive region in said substrate below said contact trench such that said buried region at least partially overlaps with said contact trench, said buried conductive region being conductively coupled to said contact.
3. (Original) The method of claim 2, wherein said buried conductive region is formed prior to the formation of said isolation trench and said contact trench.
4. (Original) The method of claim 3, wherein said contact trench is positioned so that said effective width at least partially overlaps with said buried conductive region.

5. (Original) The method of claim 3, wherein said contact trench is positioned so that said contact trench extends into said buried conductive region.

6. (Original) The method of claim 1, wherein at least one of said width of said contact trench and at least one deposition parameter during the deposition of the dielectric material is adjusted to obtain said effective width substantially in accordance with a predefined design value thereof.

7. (Original) The method of claim 1, wherein removing at least partially said insulating material includes anisotropically etching said insulating material.

8. (Original) The method of claim 7, wherein depositing said insulating material includes depositing an etch stop layer and depositing on said etch stop layer a dielectric layer.

9. (Original) The method of claim 1, wherein filling a conductive material in said contact trench includes depositing said conductive material over said contact trench and isolation trench and removing excess material of said conductive material by chemical mechanical polishing.

10. (Original) The method of claim 1, wherein said conductive material comprises a refractory metal.

11. (Original) The method of claim 1, wherein said conductive material comprises doped polysilicon.

12. (Original) The method of claim 9, wherein depositing said conductive material includes depositing a barrier layer on inner sidewalls of said contact trench.

13. (Original) The method of claim 3, further comprising implanting a dopant species into said buried region prior to at least partially removing said dielectric material from the bottom of said contact trench.

14. (Original) The method of claim 3, further comprising implanting a dopant species into said buried region after at least partially removing said dielectric material from the bottom of said contact trench.

15. (Original) The method of claim 2, wherein said buried region is formed after forming said isolation trench and said contact trench.

16. (Original) The method of claim 15, wherein ions are implanted into said substrate below said contact trench through said insulating layer to form said buried region.

17. (Original) The method of claim 15, wherein ions are implanted into said substrate below said contact trench after at least partially removing said insulating layer at the bottom of said contact trench to form said buried region.

18.-24. (Canceled)

25. (New) A method, comprising:

forming an isolation trench and a contact trench in a substrate, wherein a width of said

isolation trench is less than a width of said contact trench;

depositing an insulating material over said isolation trench and said contact trench to

substantially fill said isolation trench and reduce an effective width of said contact trench;

removing at least partially said insulating material from a bottom of said contact trench;

filling in a conductive material into said contact trench to form a contact;

forming a buried conductive region in said substrate below said contact trench such that

said buried region at least partially overlaps with said contact trench, said buried

conductive region being conductively coupled to said contact, wherein said buried

conductive region is formed prior to the formation of said isolation trench and

said contact trench, and wherein said contact trench is positioned so that said

effective width at least partially overlaps with said buried conductive region and

said contact trench extends into said buried conductive region.

26. (New) The method of claim 25, wherein at least one of said width of said contact trench and at least one deposition parameter during the deposition of the dielectric material is adjusted to obtain said effective width substantially in accordance with a predefined design value thereof.

27. (New) The method of claim 25, further comprising implanting a dopant species into said buried region prior to at least partially removing said dielectric material from the bottom of said contact trench.

28. (New) The method of claim 25, further comprising implanting a dopant species into said buried region after at least partially removing said dielectric material from the bottom of said contact trench.

29. (New) A method, comprising:

forming an isolation trench and a contact trench in a substrate, wherein a width of said isolation trench is less than a width of said contact trench;

depositing an insulating material over said isolation trench and said contact trench to substantially fill said isolation trench and reduce an effective width of said contact trench;

removing at least partially said insulating material from a bottom of said contact trench;

filling in a conductive material into said contact trench to form a contact;

forming a buried conductive region in said substrate below said contact trench such that said buried region at least partially overlaps with said contact trench, said buried conductive region being conductively coupled to said contact, wherein said buried conductive region is formed prior to the formation of said isolation trench and said contact trench, and wherein said contact trench is positioned so that said effective width at least partially overlaps with said buried conductive region; and

implanting a dopant species into said buried region prior to at least partially removing said dielectric material from the bottom of said contact trench.

30. (New) The method of claim 29, wherein said contact trench is positioned so that said contact trench extends into said buried conductive region.

31. (New) The method of claim 29, wherein at least one of said width of said contact trench and at least one deposition parameter during the deposition of the dielectric material is adjusted to obtain said effective width substantially in accordance with a predefined design value thereof.

32. (New) A method, comprising:

forming an isolation trench and a contact trench in a substrate, wherein a width of said isolation trench is less than a width of said contact trench;

depositing an insulating material over said isolation trench and said contact trench to substantially fill said isolation trench and reduce an effective width of said contact trench;

removing at least partially said insulating material from a bottom of said contact trench;

filling in a conductive material into said contact trench to form a contact;

forming a buried conductive region in said substrate below said contact trench such that said buried region at least partially overlaps with said contact trench, said buried conductive region being conductively coupled to said contact, wherein said buried conductive region is formed prior to the formation of said isolation trench and

said contact trench, and wherein said contact trench is positioned so that said effective width at least partially overlaps with said buried conductive region; and implanting a dopant species into said buried region after at least partially removing said dielectric material from the bottom of said contact trench.

33. (New) The method of claim 32, wherein said contact trench is positioned so that said contact trench extends into said buried conductive region.

34. (New) The method of claim 32, wherein at least one of said width of said contact trench and at least one deposition parameter during the deposition of the dielectric material is adjusted to obtain said effective width substantially in accordance with a predefined design value thereof.